

## ***North Dakota Ambulance Service***

### **3.2.0 Baseline Care Standards - Pediatric**

#### **EMT – Intermediate ‘85**

The assessment of the pediatric patient will vary with the age of the patient. However, there are some components that are for all ages. The following actions will be taken on each ambulance call. Once a specific patient condition is determined by the EMS provider, he or she will treat that condition according to specific protocols.

#### **Scene Size-up**

1. Review the dispatch information.
2. BSI PRN.
3. Make sure scene is safe.
4. Determine mechanism of injury.
5. Determine number and location of patients.
6. Request additional resources if needed.

#### **Primary Assessment**

The primary care provider must conduct a primary assessment for each patient to determine any life-threatening injuries or conditions. Any life-threatening conditions must be addressed immediately per specific protocol.

#### **Secondary Assessment**

A detailed secondary assessment must be performed after the primary assessment is complete and any life-threatening conditions are addressed.

#### **Standard care**

A Broselow Tape will be used and all pediatric patients will receive the following:

1. Airway, oxygen therapy, and breathing per the Airway Management protocol.
2. If there is any possibility of medication administration or the need for fluid resuscitation, establish an IV of Normal Saline TKO.
3. Monitor O<sub>2</sub> saturations.
4. At least two sets of vital signs must be recorded or vital signs every 15 minutes. If the patient is unstable, vital signs must be recorded every 5 minutes. Vital signs include:
  - Mental Status (AVPU)
  - Blood Pressure
  - Pulse
  - Respirations
  - Circulation/Motor/Sensory (CMS) in all four extremities
5. Treat specific conditions according to protocol.
6. Call for ALS intercept or helicopter transport when necessary, and if available.
7. Call the receiving hospital by radio or cell phone and give a report describing the patient's condition.

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*Medical Director's Signature*

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*Date*

## ***North Dakota Ambulance Service***

### **3.2.0 Suspected Child Abuse**

#### **EMT – Intermediate ‘85**

The following signs or symptoms indicate that a child’s safety may be at risk and at the very least, the situation should be assessed by a Physician able to determine the causes of these symptoms and offer the help and assistance necessary to reduce the risk to the child.

##### **Physical indicators:**

- Unexplained bruises or welts including those in the shape of an instrument, electric cord, belt buckle, etc.
- Numerous bruises in various stages of healing.
- Cigarette burns, especially on palms, soles, or buttocks.
- A sign of immersion burns producing sock or glove type markings on hands, feet, or the buttocks.
- Rope burns.
- Infected burns (indicating delay in treatment).
- Torn, stained or bloody underclothes.
- Bleeding, irritation or pain of the genitals.
- Poor hygiene, including lice, scabies, severe or untreated diaper rash, bedsores, body odor, etc.

##### **Behavioral indicators:**

- Inappropriate or excessive fear of parent or caretaker.
  - Unbelievable or inconsistent explanation for injuries.
  - Flat or bald spots on head (infants).
  - Nervous disorders (rashes, hives, stomach aches, facial tics).
  - Age-inappropriate behaviors (bedwetting, wetting or soiling).
  - Parents who refuse treatment or transport of suspicious injuries.
1. Present a calm care giving manner.
  2. Treat injuries according to specific protocol.
  3. Do not suggest that injuries are suspicious in any manner.
  4. Transport when possible. Report to the accepting facility in a discreet manner.
  5. Notify your local Social Service Office, law enforcement, and medical control for any suspected cases when transport was denied by parents.
  6. Treat medical or trauma conditions per protocol.

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**3.2.0 Suspected Child Abuse**

**EMT – Intermediate ‘85**

Document the following on the trip report:

- Who the incident was reported to, and
- When the incident was reported, and
- Where the incident was reported

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## ***North Dakota Ambulance Service***

### **3.2.1 Airway Management - Pediatric EMT – Intermediate ‘85**

Treatment goals in airway management of a patient in the pre-hospital environment include ensuring adequate oxygenation and safe, timely transport to the appropriate care facility.

1. Baseline care standards.
2. Place patient in position of comfort and reassure.
3. Maintain cervical spine control on patients with suspected trauma.
4. Auscultate with stethoscope at least four different areas of the chest and document.
5. If spontaneous breathing is present without compromise:
  - Monitor breathing during transport.
  - Administer oxygen PRN:
    - Infants via infant mask @ 2 – 4 L per minute
    - Small child (1 – 8 years) via pediatric mask @ 6 – 8 L per minute.
    - Older child (9 – 15 years) via non-rebreather @ 15 L per minute.
    - If mask is not tolerated, administer via blow-by method.
6. If spontaneous breathing is present with compromise:
  - Manually open airway.
  - Suction PRN.
  - Administer oxygen PRN:
    - Infants via infant mask @ 2 – 4 L per minute
    - Small child (1 – 8 years) via pediatric mask @ 6 – 8 L per minute.
    - Older child (9 – 15 years) via non-rebreather @ 15 L per minute.
    - If mask is not tolerated, administer via blow-by method.
  - If unable to maintain airway, insert oropharyngeal or nasopharyngeal airway PRN.
  - Assist ventilations with BVM.
  - Monitor O<sub>2</sub> saturations with pulse oximeter.
7. If spontaneous breathing is absent or markedly compromised:
  - Manually open airway.
  - Suction PRN.
  - If unable to maintain airway, insert oropharyngeal or nasopharyngeal airway.
  - Ventilate with BVM @ 20 per minute for a child and 30 per minute for an infant.
  - Monitor O<sub>2</sub> saturations with pulse oximeter.

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**3.2.1 Airway Management - Pediatric  
EMT – Intermediate ‘85**

8. If patient is in cardiac arrest, intubate using direct laryngoscopy and appropriate size endotracheal tube. If cervical spine injury is suspected, have second person maintain c-spine control during intubation.
  - Verify tube placement by: auscultation of breath sounds, esophageal detector device, and capnometry.
  - Secure ETT with commercial device.
  - Monitor O<sub>2</sub> saturations with pulse oximeter.
9. Call for ALS intercept and transport.

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## ***North Dakota Ambulance Service***

### **3.2.2 Asthma - Pediatric**

#### **EMT – Intermediate ‘85**

Asthma is considered an obstruction of the lower airway. Care should be focused on adequate oxygenation, ventilation and medication administration to improve breathing. Respiratory emergencies are life threatening in the pediatric population; it is critical to be alert for early signs of decompensation.

1. Baseline care standards.
2. Place patient in a position of comfort and reassure the patient.
3. Administer high flow oxygen.
4. Assist with prescribed metered dose inhaler if the patient has one.
5. If wheezing persists administer:
  - a. *Albuterol 2.5mg in 3cc Normal Saline-* by nebulizer.
  - b. Patient may receive continuous *Albuterol nebulizer* treatments until breath sounds are clear.
6. Monitor vital signs and airway closely.
7. Consider that a reduced respiratory rate may indicate fatigue and pending respiratory failure.
8. Start IV of Normal Saline at a TKO/KVO rate.
9. Transport with the appropriate response.
10. Consider ALS intercept for additional pharmacological interventions or advanced airway procedures.

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## ***North Dakota Ambulance Service***

### **3.2.2 Croup and Epiglottitis**

#### **EMT – Intermediate ‘85**

Croup and epiglottitis are upper airway obstructions. Patient care should be focused on adequate oxygenation and ventilation during transport. Respiratory emergencies are life threatening in the pediatric population; it is critical to be alert for early signs of decompensation. Avoid agitating the child with suspected epiglottitis.

1. Baseline care standards.
2. Place patient in position of comfort (upright in parent’s lap if possible).
3. Administer high flow oxygen by mask or blow-by and monitor O<sub>2</sub> sats (may use humidified oxygen if available).
4. Focused history and assessment.  
Differential Diagnosis:
  - Croup:
    - Viral infection usually in children 6 months to 4 years of age.
    - Mild fever - some hoarseness.
    - Barking “seal bark” cough.
    - Condition worsens at night.
    - Nasal flaring, tracheal tugging and intercostal retractions possible.
    - Restlessness.
    - Pale skin and cyanosis is possible.
  - Epiglottitis:
    - Bacterial infection usually in children 4 years of age and older.
    - Sudden onset of high fever.
    - Painful swallowing (child may be drooling due to difficult swallowing).
    - Child may sit in tripod position in attempt to open airway.
    - Nasal flaring, tracheal tugging, intercostal retractions, and stridor possible.
    - Child may appear to look very ill.
5. Should the patient deteriorate, be prepared to assist ventilations with BVM.
6. **Do not attempt to visualize internal airway in responsive patient.**
7. **Establish IV Normal Saline TKO only in unresponsive patient.**
8. Call for ALS intercept and transport.

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***North Dakota Ambulance Service***  
**3.2.2 Obstructed Airway - Pediatric**  
**EMT – Intermediate ‘85**

Causes of upper airway obstruction include the tongue, foreign bodies, swelling, trauma to airway, and infections. Identifying the cause of upper airway obstruction is essential to determining treatment. The treatment goal of the patient that is choking is to relieve the patient of the obstruction, provide adequate oxygenation, provide support and timely transport to the appropriate facility.

1. Baseline care standard.
2. If patient is coughing or moving air, encourage coughing to clear the object.
3. If airway remains obstructed, perform the following for the removal of obstruction:
  - Administer standing abdominal thrusts until dislodged or patient becomes unconscious. (back blows and chest thrusts for infants only).
  - Once unconscious, lay patient supine and continue sequence of looking for the object, attempt to ventilate, CPR, until obstruction is dislodged.
4. If unable to dislodge a foreign body, visualize with laryngoscope and extract foreign body with Magill forceps. Use suction if necessary, to clear airway.
5. Establish airway per Airway Management protocol. If unable to intubate and patient cannot be ventilated by other means, perform cricothyroidotomy.
6. If airway is cleared, administer O<sub>2</sub> 15L per minute via mask.
7. Establish an IV of Normal Saline TKO.
8. Call for ALS intercept and transport with lights and sirens PRN.

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## *North Dakota Ambulance Service*

### **3.2.3 Cardiac Arrest - Pediatric EMT – Intermediate ‘85**

The goal in the cardiac arrest patient is: rapid assessment, rapid intervention by establishing an adequate airway, ongoing CPR, intravenous access, application of an AED, and defibrillation. Transport should be started as soon as practical and ALS intercept called for early. Treatment needs to be ongoing during all phases of transport. CPR and ventilation may need to be stopped to facilitate some phases of patient transport. These interruptions should be minimized as much as possible by evaluating all phases of patient extrication and transport prior to carrying out the individual steps. Early notification of the receiving emergency department and medical control is necessary. Although individual treatments are listed individually in practical application, many steps are carried out simultaneously when they can be.

1. Baseline care standards.
2. Establish that the patient is pulseless and breathless. Begin CPR.
3. If cardiac arrest was unwitnessed or EMS arrival to the patient is estimated to be more than 5 minutes since the patient went into arrest, complete 2 minutes of CPR prior to defibrillation. **(DO NOT APPLY AED TO INFANTS LESS THAN 1 YEAR OLD)**
  - During initial administration of CPR, the AED should be attached to the patient.
4. If cardiac arrest was witnessed and EMS arrival to the patient is estimated to be less than 5 minutes since the patient went into arrest, attach the AED to the patient and check rhythm prior to beginning CPR. Follow prompts given by AED.
5. After the first and all subsequent defibrillations, immediately begin CPR for 2 minutes.
  - CPR should not be delayed for rhythm or pulse checks unless signs of circulation have returned.
6. For an infant less than one year old:
  - Continue CPR until ALS responders take over or victim starts to move.
  - **DO NOT APPLY AED TO INFANTS.**
7. A maximum of 3 defibrillations may be delivered on scene prior to initiating transport.
8. If the AED advises no shock, initiate transport with rhythm checks by the AED occurring approximately every 2 minutes.
9. Manage airway per protocol.
10. Establish IV Normal Saline TKO.

***North Dakota Ambulance Service***  
**3.2.3 Cardiac Arrest - Pediatric**  
**EMT – Intermediate ‘85**

11. Call for ALS intercept.

12. Transport.

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## ***North Dakota Ambulance Service***

### **3.2.4 Care of the Newborn**

#### **EMT – Intermediate ‘85**

Treatment goals for care of the newborn is to protect the infant from injury, ensure oxygenation, perfusion and warmth, provide advanced life support, and immediate transportation of the newborn and mother to the appropriate facility.

1. Baseline care standards.
2. Body Substance Isolation precautions.
3. Deliver baby per protocol.
4. The infant should be assessed continually. Record the assessment findings one minute after birth and again 5 minutes after birth.
5. Never delay life-saving treatment to obtain a score.
6. Use the APGAR score below:

Test	0 Points	1 Point	2 Points
<b>A</b> ctivity (Muscle Tone)	Absent	Arms & legs extended	Active movement with flexed arms & legs
<b>P</b> ulse (Heart Rate)	Absent	Below 100 bpm	Above 100 bpm
<b>G</b> rimace (Response Stimulation or Reflex Irritability)	No Response	Facial grimace	Sneeze, cough, pulls away
<b>A</b> pppearance (Skin Color)	Blue-gray, pale all over	Pink body and blue extremities	Normal over entire body – Completely pink
<b>R</b> espiration (Breathing)	Absent	Slow, irregular	Good, crying

7. For inadequate respiratory effort (slow, shallow, or absent), provide positive–pressure ventilations at a rate of 30 to 60 per minute.
8. For inadequate heart rate of less than 100 per minute, provide positive–pressure ventilations at a rate of 60 per minute.
9. For heart rate of less than 80 beats per minute, follow newborn CPR standards.
10. Reassess. If the heart rate is greater than 100 beats per minute and respirations are adequate, stop CPR and ventilations and give oxygen via blow-by.
11. If cyanosis is present in the infant’s trunk, but the infant’s breathing and heart rate are adequate, administer oxygen via blow-by.

***North Dakota Ambulance Service***

**3.2.4 Care of the Newborn**

**EMT – Intermediate ‘85**

12. Call for ALS intercept and transport.
13. Inform hospital as soon as possible of your patient so they can prepare for arrival.

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***North Dakota Ambulance Service***  
**3.2.5 Allergic Reaction - Pediatric**  
**EMT – Intermediate ‘85**

Treatment goals of the patient with a severe allergic reaction in the pre-hospital environment include treatment of the local and systemic reactions, ensuring adequate oxygenation, administration of epinephrine, advanced life support when appropriate, and safe timely transport to the appropriate care facility. Be prepared to manage systemic airway complications and anaphylactic shock.

1. Baseline care standards.
2. Maintain a calm approach to both parent and child.
3. Allow the child to assume and maintain a position of comfort or to be held by parent, preferably in an upright position.
4. Administer high concentration of oxygen.
5. If an injection site, treat local reaction with ice.
6. Request an advanced life support intercept at first sign of systemic reaction.
7. Continuously reassess airway, breathing and circulation status.
8. If the patient shows signs of breathing distress, increased heart rate, swollen lips and tongue, and increased hives, administer Epinephrine auto-injector pediatric dose (0.15mg).
9. Establish IV access at a TKO rate for normal blood pressure. IV fluid bolus of 20ml/kg for hypotension over 5-20 minutes. Reassess; repeat if necessary.
10. Treat for shock and be prepared to initiate CPR and AED as necessary during transport.
11. Continue transport / intercept without delay.
12. If the patient's condition shows signs of increasing distress, repeat pre-loaded auto injectable Epinephrine (0.15mg) every 5-10 minutes.
13. Perform orotracheal intubation and advanced airway management on unresponsive patient.

\* May use adult auto injector pen for children over 70 pounds.

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## ***North Dakota Ambulance Service***

### **3.2.5 Altered Mental Status - Pediatric EMT – Intermediate ‘85**

Altered mental status may be caused by neurological trauma, overdose, poisoning, hypoglycemia, decreased oxygenation, or other illness. Treatment goals of the patient with an altered mental status in the pre-hospital environment include insuring responder safety, assessing for treatable causes, assuring adequate airway control and oxygenation, advanced life support when indicated, and safe timely transport to the appropriate care facility.

1. Baseline care standards.
2. Manage airway per protocol.
3. Assess level of consciousness using AVPU.
4. Administer oxygen 15L per minute via non-rebreather.
5. Obtain focused history and physical exam of environment for clues.
6. Obtain blood glucose level. Follow diabetic emergency protocol for treatment as needed.
7. Wear facial PPE for any signs of fever or rash with altered mental status.
8. Provide appropriate trauma care as necessary.
9. Establish IV of Normal Saline at TKO rate.
10. If signs of shock, give Normal Saline bolus 20 ml / kg.
11. Request ALS intercept for pharmacological intervention in preparation for possible seizure activity.

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*Date*

## ***North Dakota Ambulance Service***

### **3.2.5 Diabetic Emergencies - Pediatric**

#### **EMT – Intermediate ‘85**

Glucose, a form of sugar, is the body’s basic source of energy. An abnormal blood sugar level has an effect on all organs including the heart and the brain. Returning to normal perfusion as quickly as possible is the ultimate goal.

#### **Conscious patient – low blood sugar**

Children with diabetes are at risk for a low blood sugar emergency as their activity levels may exhaust blood sugar levels.

1. Baseline care standards.
2. Administer high flow oxygen.
3. Obtain blood glucose level. If blood glucose is < 60mg/dl then;
4. Establish IV and:
  - For children 10 to 80 pounds (3kg-37kg). Administer *Dextrose 25% at 2ml/kg IV* (mix 25ml of D50 with 25ml of Normal Saline).
  - For Children over 80 pounds treat as adult. Administer *Dextrose 50% at 2ml/kg IV*.
5. If the child is wearing an insulin pump, turn it off.
  - Administration of glucose should not be delayed to turn off the pump.
6. If unable to establish an IV, give oral glucose gel between cheek and gum.
7. When mental status has returned to normal, the patient should be strongly encouraged to eat a carbohydrate snack.

#### **Conscious patient – high blood sugar**

It is uncommon for an ambulance to be dispatched for a child with a high blood sugar as most parents would have sought care for their child previously, as this is a slow onset illness. However, it is possible in a new onset of juvenile diabetes or in the case of a child with a history of diabetes who has been ill for a few days.

1. Baseline care standards.
2. Administer high flow oxygen.
3. Obtain blood glucose level.

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**3.2.5 Diabetic Emergencies - Pediatric**  
**EMT – Intermediate ‘85**

4. Establish IV:
  - IV fluid bolus of 20ml/kg over 30-60 minutes for blood glucose levels above 300 mg/dl.
  - TKO/KVO if glucose level is below 300mg/dl.
5. If the child is wearing an insulin pump, leave it on.
6. Transport in the recovery position.
7. If patient is altered and you are unable to determine by blood sample or history, treat as low.

**Unconscious Patient**

Patients that are unconscious should never have anything by mouth.

1. Baseline care standards.
2. Administer high flow oxygen.
3. Obtain blood glucose level.
4. **Hypoglycemic** - Establish IV and:
  - For children 10 to 80 pounds (3kg-37kg). Administer *Dextrose 25% at 2ml/kg IV* (mix 25ml of D50 with 25ml of Normal Saline).
  - For Children over 80 pounds treat as adult. Administer *Dextrose 50% at 2ml/kg IV*.
5. **Hyperglycemic-**
  - IV fluid bolus of 20ml/kg over 30-60 minutes for blood glucose levels above 300 mg/dl.
  - TKO/KVO if glucose level is below 300mg/dl.
6. If the child is wearing an insulin pump and is hypoglycemic, turn it off.
7. Transport in the recovery position.
8. Monitor airway and vital signs closely.
9. If not transporting, ensure that the patient has eaten a carbohydrate snack.

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## ***North Dakota Ambulance Service***

### **3.2.5 Poisoning or Overdose - Pediatric**

#### **EMT – Intermediate ‘85**

This protocol will address common poisoning or overdose treatments. If you are unsure of the overdose or exposure, treat the symptoms as they present. If you are unable to rule out trauma, follow the Baseline Trauma Care Standards. Rapid assessment and support of airway, ventilation, oxygenation, and circulation are paramount in toxicological emergencies. Physical signs such as pupil size and response to light, skin color and temperature, seizure activity and heart rate may have a particular value and diagnostic significance to the patient with a toxic exposure.

1. Baseline Care Standards.
2. Maintain airway per Airway Management protocol.
3. Establish IV Normal Saline TKO PRN.
4. Monitor O<sub>2</sub> saturations.
5. Try to find the source of the poisoning or overdose; ask patient, bystanders, search for pill bottles, etc.
6. Call poison control **1-800-222-1222**.
7. If the patient is cooperative, maintaining an airway, and not mentally altered administer:
  - *Activated Charcoal 1 gm/kg PO.*
8. Perform blood glucose test. If glucose is <60 mg/dl, go to Diabetic Emergencies protocol.
9. If patient is seizing, go to Seizure protocol.
10. If hypotensive, give fluid challenge of 20 ml/kg.
11. If combative, restrain patient per protocol.
12. Call for ALS intercept.
13. Transport.

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## ***North Dakota Ambulance Service***

### **3.2.5 Seizures - Pediatric**

#### **EMT – Intermediate ‘85**

This protocol should be used when the patient has had continuous convulsions or repeating episodes without regaining consciousness or respiratory decompensation. Seizures may be caused by epilepsy, infections, poisoning, hypoglycemia, trauma, or decreased levels of oxygen. Care should be focused at maintaining an open airway, adequate oxygenation, protection and treatment of injury, and supporting the return to normal mental status.

1. Baseline care standards.
2. Airway management per protocol.
3. Establish IV Normal Saline TKO. Draw blood sample prior to infusing fluids.
4. Perform blood glucose test. If glucose is < 60mg/dL, administer:
  - For children 10 to 80 pounds (3kg-37kg). Administer *Dextrose 25% at 2ml/kg IV* (mix 25ml of D50 with 25ml of Normal Saline).
  - For Children over 80 pounds treat as adult. Administer *Dextrose 50% at 2ml/kg IV*.
5. Gather all patient medications.
6. Rapid transport and call for ALS intercept.

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## ***North Dakota Ambulance Service***

### **3.2.6 Frostbite**

#### **EMT – Intermediate ‘85**

Frostbite can occur in three levels of severity:

- A. First degree: Presents itself as numbed skin that may turn white in color and waxy in appearance. The skin may feel stiff to the touch, but the tissue under is still warm and soft.
- B. Second degree: The skin will be white or blue and will feel hard and frozen. Blistering and edema are likely. Second degree frostbite is a serious medical condition.
- C. Third degree: The skin is white, blotchy, and/or blue. The tissue underneath is hard and cold to the touch. The tissue underneath has been damaged and blistering is inevitable.

1. Baseline care standards.
2. Remove patient from cold environment and place patient in warm, dry place. Remove wet clothing. Dry patient and cover with dry linen to protect from further heat loss.
3. Check core temperature.
  - If core temperature is  $< 35^{\circ}\text{C}$ , refer to Hypothermia protocol.
4. Administer  $\text{O}_2$  15L per minute via mask. Use warmed humidified  $\text{O}_2$  if available.
5. Remove jewelry, gloves, shoes, and other restrictive objects.
6. Attend to injured areas:
  - Protect from pressure, trauma, and friction.
  - Do not rub or massage.
  - Do not allow limb to thaw if there is a chance it will refreeze.
  - Do not allow patient to ambulate once the limb has started to thaw.
  - Consider warming in warm water, make sure temp stays constant.
  - Continue until distal tip of injured extremity flushes.
  - Dry and wrap affected area with dry sterile dressings.
7. DO NOT rapidly rewarm.
8. Use a pulse oximeter probe to detect peripheral perfusion in affected tissues.
9. Establish IV access in unaffected limb.
10. Call for ALS intercept and transport to nearest appropriate hospital.

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## ***North Dakota Ambulance Service***

### **3.2.6 Hypothermia - Pediatric**

#### **EMT – Intermediate ‘85**

Hypothermia is generally defined into three categories: Mild hypothermia: temperatures between 93.2°F (34°C) and 98.6°F (37°C), Moderate hypothermia: temperatures between 86°F (30°C) and 93.2°F (34°C), Severe hypothermia: temperatures below 86°F (30°C). Mild to moderate hypothermia patients will present with shivering, lethargy, and stiff, uncoordinated muscles. Severe hypothermia patients may be disoriented and confused, stuporous, or unresponsive. Shivering will typically be absent and physical activity will be uncoordinated. Severe hypothermia will frequently produce dysrhythmias.

1. Baseline care standards.
2. Remove wet garments and gently dry patient.
3. Protect against further heat-loss and wind-chill.
4. Maintain horizontal position.
5. Avoid rough movement and excess activity.
6. Monitor core temperature.
7. Treat major trauma as the first priority and hypothermia as the second.
8. If pulse/breathing are absent:
  - Start CPR.
  - Place AED - If ventricular fibrillation/ventricular tachycardia are present, treat with one shock.
  - Maintain airway per protocol.
  - Establish IV of warm Normal Saline.
9. If core temperature <30°C (86°F):
  - Continue CPR.
  - Limit shocks to a maximum of 3.
10. If core temperature >30°C (86°F):
  - Continue CPR.
  - Repeat defibrillation for ventricular fibrillation/ventricular tachycardia as core temperature rises.
11. If pulse/breathing are present:
  - Initiate IV of warm Normal Saline.

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**3.2.6 Hypothermia - Pediatric**

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12. Check blood sugar, if glucose < 80 mg/dl, give:
  - 0.5 gm/kg of Dextrose 25% (mix 25ml of D50 with 25ml of Normal Saline).
13. Begin external re-warming.
14. Call for ALS intercept.
15. Transport with lights and sirens.

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## ***North Dakota Ambulance Service***

### **3.2.6 Near Drowning - Pediatric EMT – Intermediate ‘85**

Near drowning patients may or may not be conscious. Regardless of how well a patient has seemed to recover, all near drowning patients must be transported to the hospital. Delayed death or complications due to pulmonary edema or aspiration pneumonia may occur.

1. Baseline care standards.
2. If trauma is suspected, take full cervical spine precautions and immobilize patient.
3. Protect patient from hypothermia.
4. Administer O<sub>2</sub> 15L per minute via mask.
5. Attach pulse oximeter.
6. Initiate IV Normal Saline TKO.
7. Manage airway per protocol.
8. If patient's systolic blood pressure is  $< 80 \text{ mmHG} + (\text{years in age} \times 2)$ :
  - Elevate legs.
  - Administer 20 ml/kg fluid bolus. Repeat to maintain systolic BP  $>90 \text{ mmHg}$ .
9. Call for ALS intercept.
10. Transport to the nearest appropriate hospital.

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*Date*

## ***North Dakota Ambulance Service***

### **3.2.7 Trauma Baseline Care Standards - Pediatric**

#### **EMT – Intermediate ‘85**

The following actions will be taken on each ambulance trauma call. Once a specific patient condition is determined by the EMS provider, he or she will treat that condition according to specific protocols.

##### **1. Scene Size-up**

- Review the dispatch information.
- BSI PRN.
- Make sure scene is safe.
- Determine mechanism of injury.
- Determine number and location of patients.
- Request additional resources if needed.

##### **2. Primary Assessment**

- The primary care provider must conduct a primary assessment for each patient to determine any life-threatening injuries or conditions. Any life-threatening conditions must be addressed immediately per specific protocol. Call for trauma code as soon as possible PRN (see trauma transport scheme below).
- Airway, oxygen therapy, and breathing as per the Airway Management protocol. (Manually stabilize C-spine PRN).
- Treat any massive flail segment that causes respiratory compromise.
- Treat tension pneumothorax per protocol.
- Control hemorrhage.

##### **3. Secondary Assessment**

- A detailed secondary assessment must be performed after the primary assessment is complete and any life-threatening conditions are addressed.
- Apply C-Collar and fully immobilize the spine on backboard or pediatric immobilizer PRN.
  - Infants and small children in car seats may be immobilized without removing them from the car seat, as long as it will not interfere with patient assessment or other procedures, and the car seat is intact. If patient has been removed from car seat, do not put patient back into car seat to immobilize.
- Establish an IV of Normal Saline. If hypotensive, infuse 20ml/kg bolus. Repeat PRN.
- Monitor O<sub>2</sub> saturations.
- Apply traction splint for femur fracture.
- Splint other extremity fractures in position of comfort. Consult with medical control if distal CMS deficits are noted.
- At least two sets of vital signs must be recorded or vital signs every 15 minutes. If the patient is unstable, vital signs must be recorded every 5 minutes. Vital signs include:
  - Mental Status (AVPU).
  - Blood Pressure

## ***North Dakota Ambulance Service***

### **3.2.7 Trauma Baseline Care Standards - Pediatric EMT – Intermediate ‘85**

- Pulse
- Respirations
- Circulation/Motor/Sensory (CMS) in all four extremities.
- Glasgow Coma Scale (GCS).
- Treat specific conditions according to protocol.
- Call for ALS intercept or helicopter transport if available.
- Transport and trauma team activation per decision scheme below:

**A patient with any one of the following criteria must be transported to a trauma designated hospital and a trauma code must be activated.**

Glasgow Coma Scale.....<14  
Systolic Blood Pressure.....<90  
Respiratory Rate.....<10 or > 29

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
- Flail Chest
- Combination trauma with burns
- Two or more long-bone fractures
- Amputation proximal to wrist and ankle
- Pelvic Fractures
- Open or depressed skull fractures
- Paralysis
- Major Burns

**A patient with any one or more of the following criteria must be transported to a trauma designated hospital and a trauma code may be activated at the discretion of the EMS provider.**

- Ejection from an automobile
- Death in the same passenger compartment
- High speed auto crash, with initial speed > 40mph, major auto deformity >20 inches, and intrusion into passenger compartment > 12 inches
- Auto-pedestrian/auto-bicycle with significant impact (>5 mph)
- Pedestrian thrown or run over
- Motorcycle crash > 20mps or rider separated from bike
- Falls > 20 feet
- Rollover
- Extrication time > 20 minutes
- Age <5 or >55
- Cardiac Disease or Respiratory Disease
- Insulin-Dependant Diabetes, cirrhosis, or morbid obesity
- Pregnancy
- Immunosuppressed patients
- Patients with bleeding disorders or on anticoagulants.

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*Medical Director's Signature*

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*Date*



## ***North Dakota Ambulance Service***

### **3.2.7 Burns - Pediatric**

#### **EMT – Intermediate ‘85**

Burns can be caused by thermal, chemical, and electrical sources. Burn patients are volume depleted, however, they do not bleed. Therefore, look for other sources of bleeding. Many burn injuries are associated with respiratory burns that may not be obvious. The signs and symptoms of respiratory burns include: burns about the nose and face, charring in the mouth, blackened (sooty) sputum, singed nasal or facial hair, abnormal breath sounds (stridor, rhonchi, and wheezing), and respiratory distress. In cases of respiratory burns, attention should be given to the patency of the airway. Acute swelling can cause an airway obstruction. Consider early intubation to avoid a complete airway obstruction.

Burns pose a greater risk to infants and children. This is because their body surface area is greater in relation to their total body size. This results in greater fluid and heat loss than a normal adult.

1. Baseline care standards.
2. Extinguish any flames on patient and remove smoldering clothing and any constricting clothing or jewelry.
3. Remove patient from harmful environment and limit injury:
  - Chemical: Flush with water or normal saline. Brush off dry chemicals.
  - Tar: Cool with water or normal saline (do not attempt to remove tar).
  - Electrical: Remove from contact with current source if equipped to do so. (Note any secondary fractures and exit wounds caused by current).
4. Allow child to be near parent. Make sure parents do not become contaminated.
5. Administer oxygen at 15L per minute via mask. Continually reassess the airway. Children’s airways are smaller and shorter, making them more likely to be affected by swelling.
6. Do not apply any type of ointment, lotion, or antiseptic to burns.
7. If there are 2<sup>nd</sup> or 3<sup>rd</sup> degree burns of less than 20% body surface area:
  - Apply wet sterile dressings to burned area.
  - Be careful not to cause hypothermia.
  - IV Lactated Ringer’s TKO.
8. If significant 2<sup>nd</sup> or 3<sup>rd</sup> degree burns of equal to or greater than 20% body surface area:
  - Cover burns with dry sterile dressings.
  - Establish two large bore IVs of Lactated Ringer’s.

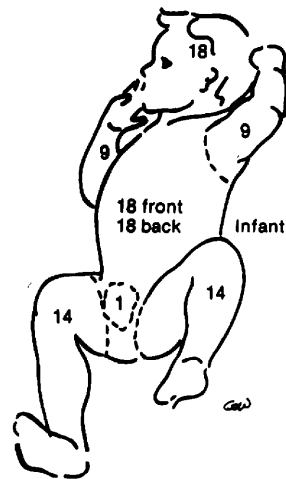
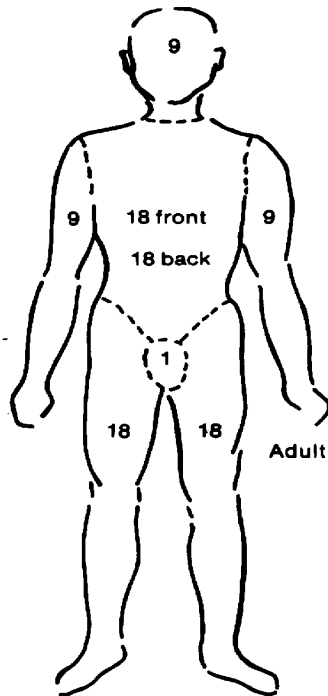
## ***North Dakota Ambulance Service***

### **3.2.7 Burns - Pediatric**

#### **EMT – Intermediate ‘85**

- For ongoing care administer IV fluids using the Parkland Formula ( $4\text{ml} \times \text{Pt's weight (kg)} \times \% \text{BSA}$ ):
  - i. Give  $\frac{1}{2}$  in the first 8 hours post-burn
  - ii. Give  $\frac{1}{4}$  in the second 8 hours
  - iii. Give  $\frac{1}{4}$  in the third 8 hours
- 9. If the patient has an altered level of consciousness and / or signs of head injury (consider carbon monoxide poisoning if closed space burn):
  - Immobilize cervical spine when appropriate.
  - IV Lactated Ringer's TKO.
- 10. Transport patient on sterile dry burn sheets.
- 11. To estimate percent of body surface area injured, use the "Rule of Palm." The patient's palm size equals approximately 1 percent of the body surface area.
- 12. Call for ALS intercept if available.
- 13. Contact medical control for any questions or problems.

#### **Rule of Nines**



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*Medical Director's Signature*

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*Date*

## ***North Dakota Ambulance Service***

### **3.2.7 Eye Injuries- Pediatric EMT – Intermediate ‘85**

This protocol covers a wide variety of injuries to the eye. If other injuries to the body exist, priority of care should be given as appropriate.

1. Baseline Care Standards
2. Maintain airway per protocol.
3. Control all bleeding.
4. Remove contact lenses.
5. Irrigate eyes with copious amounts of water.
6. Cover both eyes to minimize movement of injured eye.
7. Leave penetrating objects in and immobilize them with dressings. Consider use of rigid cervical collar and long board.
8. Reassure patient. Keep patient calm.
9. Call for advanced life support intercept (ground or flight).
10. Transport to appropriate facility.

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*Medical Director's Signature*

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*Date*

***North Dakota Ambulance Service***  
**3.2.7 Heat Emergencies - Pediatric**  
**EMT – Intermediate ‘85**

Heat injuries are categorized in three areas. **Heat cramps** are associated with muscular cramps and aches, usually in abdomen, arms, or legs. **Heat Exhaustion** occurs with excess sweating. Typically other symptoms include; nausea, vomiting, fatigue, weakness, muscle cramps, and/or dizziness. **Heat Stroke** is a true medical emergency. Signs and symptoms may include those listed for heat cramps and heat exhaustion, with the addition of; headache, altered mental status, lethargy, seizures, hot dry or moist skin, hyperthermia, loss of consciousness, increased heart rate, and hallucinations.

1. Baseline care standards.
2. Administer oxygen at 15L per minute via non-rebreather mask.
3. Maintain airway per protocol.
4. Start large bore IV of Normal Saline at a TKO rate. Administer 20mL/Kg fluid bolus to maintain blood pressure.
5. Place patient in supine position with legs slightly elevated.
6. Assess vital signs, including temperature every 10 minutes.
7. Loosen or remove excess and constrictive clothing.
8. If heat exhaustion or heat stroke is suspected:
  - Move patient to cooler environment.
  - Cool with fine water misting spray (must have good ambient air flow).
  - Stop cooling measures when core body temp is 39° C.
9. If patient is conscious you may give sips of cool water.
10. Consider ALS intercept.

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*Medical Director's Signature*

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*Date*